

ABSTRACT OF THE DISCLOSURE

A variable loading rate method of starting a plurality of gas turbines (GT1, GT2) used in a combined cycle power plant for generating electricity. A first gas turbine is started and allowed to operate at a minimum load condition. The turbine is maintained at this load level while a second gas turbine is started brought up to its minimum load condition. Start-up of a steam turbine (ST) to which the gas turbines are operationally coupled is initiated while both gas turbines are maintained at their minimum load conditions. The load on both gas turbines is then increased to a predetermined level, which is greater than their minimum load levels, once operating temperatures within the steam turbine reach predetermined levels. Subsequently, both gas turbines are loaded as function of the load on the a steam turbine at to which the gas turbines are coupled. This variable loading rate starting sequence lowers the amount of NO₂ produced during start-up of the turbines and reduces the occurrence of a visible yellow plume at a power generating plant.